The background of the entire page is a high-speed photograph of water splashing, creating numerous bubbles and ripples. The image is split into horizontal bands of different shades of blue and white.

SEWER RATE STUDY

March 2016

Prepared by:



Bowen Collins
& Associates, Inc.
CONSULTING ENGINEERS

Prepared for:

*Strawberry Lakeview
Special Service
District*

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Prepared by:
Bowen, Collins & Associates
154 East 1400 South
Draper, Utah 84020



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EXECUTIVE SUMMARY

INTRODUCTION

Strawberry Lakeview Special Service District (SLSSD or District) has not updated its service charges for several years. The District faces potential capital improvement costs, enterprise fund pay off costs, as well as maintenance and operation costs which will likely increase in the years to come. The purpose of this study is to update the District's sewer service charges. Implementing the recommendations contained in this report will assist the District in adequately funding the potential infrastructure improvements and staying on track with projected operation budgets.

SEWER RATE ANALYSIS

The primary objective of this sewer rate analysis is to establish fair and equitable rates that will be sufficient to meet revenue requirements for the District. To accomplish this goal, this analysis focused on four major tasks:

- 1. Projecting Growth:** The SLSSD system is currently composed of 46 active connections and 49 standby connections. Based on discussions with District personnel regarding historically slower growth and the revenue risk associated to basing rates on overly high growth, it was assumed that there will be an average of two new active connections into the SLSSD system per year and a net decrease of one standby connection per year. This corresponds to a growth rate of 3-4% for active accounts and about 1% for all accounts.
- 2. Calculating Revenue Requirements:** Total revenue requirements for the District were projected for the next several years. This includes operations and maintenance costs, capital improvement costs, facilities rehabilitation/replacement costs, and pay off the enterprise fund deficit. Revenue generated outside of sewer rates (interest income and penalty fees) was deducted from the total to give the net revenue requirement to be recovered from service charges.
- 3. Cost Allocation:** This analysis generally followed the design cost-causative procedure recommended by the Water Pollution Control Federation (WPCF), American Society of Civil Engineers (ASCE), and American Public Works Association (APWA). The essential principle of this method is that sewer rates should be recovered from customers in proportion to the cost of serving customers.
- 4. Sewer Rate Design:** Sewer rates were calculated to recover the allocated cost of service based on operation and maintenance costs, pay off the enterprise fund deficit, and capital improvement costs.

The District has historically been running an annual financial deficit based on revenues versus required expenditures. The recommended increases to the sewer rates shown in Table ES-1 (next page) reflect a multiple year rate schedule needed to meet the costs described above. Typically, it is desirable for rate changes to occur gradually over several years to avoid shocking customers with a sudden rate increase. However, if the existing customers are made aware that revenue has fallen well short of expenditures over the last several years, the sudden increase in rates may be

more readily accepted. The sudden increase of rates would prevent the District from further falling into deficit and pay off the enterprise fund quicker. In 2023, upon fully paying off the current enterprise fund deficit and building up the fund to have a surplus of 6 months of operation and maintenance expenditures, the rates can likely be lowered.

Table ES-1
Calculated/Recommended Rates

These are not the rates approved.
See Resolution 2016-06 for
Alternate Rates approved.

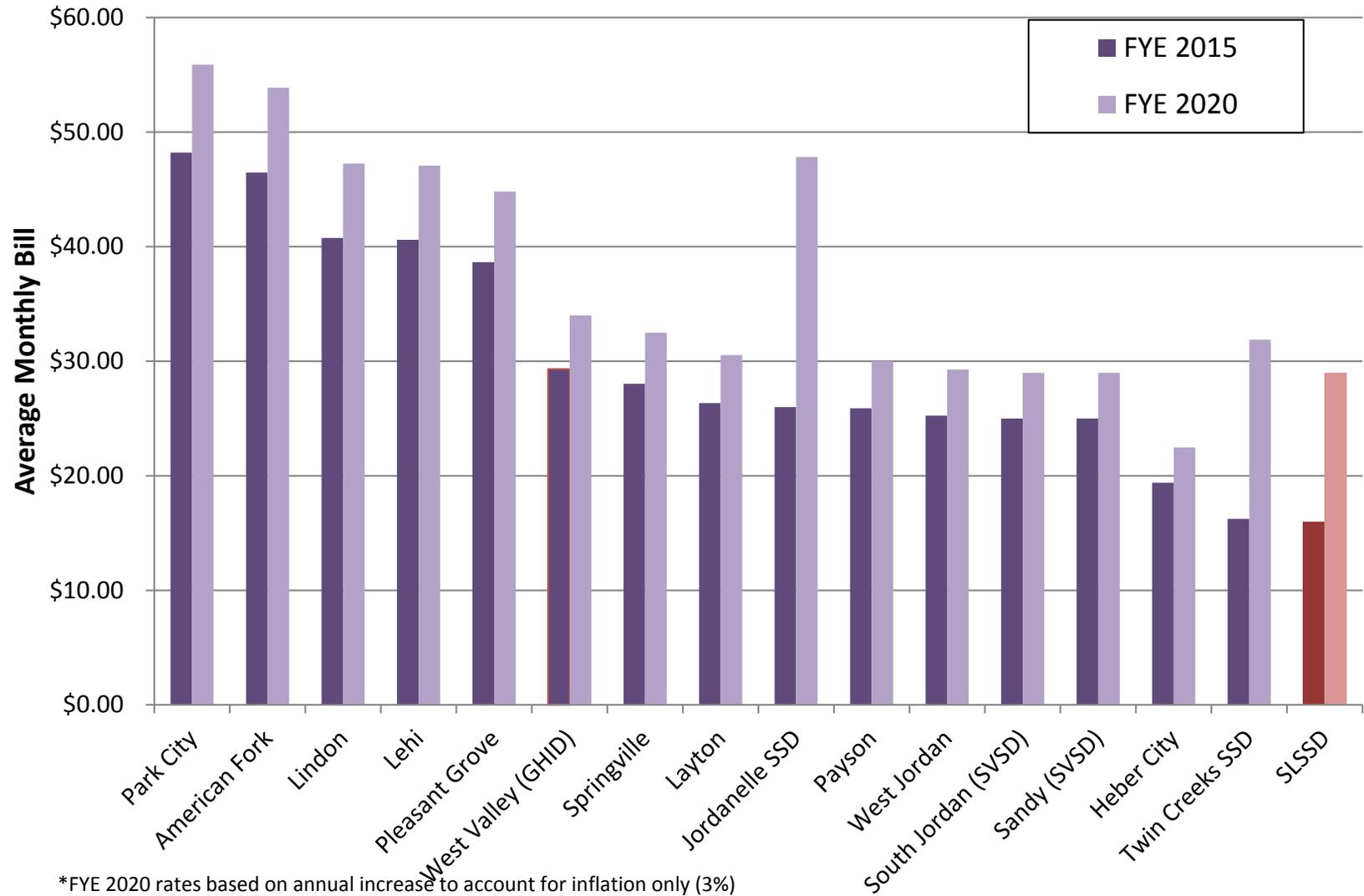
| Customer Class | Existing | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---------------------------------|----------|---------|---------|---------|---------|---------|---------|
| Connected | \$16.00 | \$26.76 | \$27.51 | \$27.96 | \$28.44 | \$28.95 | \$29.48 |
| Standby | \$10.00 | \$17.09 | \$17.69 | \$18.15 | \$18.62 | \$19.11 | \$19.62 |
| Rate Increase Percentage | | | | | | | |
| Connected | - | 67.2% | 2.8% | 1.6% | 1.7% | 1.8% | 1.8% |
| Standby | - | 70.9% | 3.5% | 2.6% | 2.6% | 2.6% | 2.6% |

As shown in Figure ES-1 (next page), the District's existing rates are currently the lowest of any of the sewer service entities surveyed as part of this study. With the rate increases shown in Table ES-1, the cost of service in SLSSD will still be among the lowest of those entities surveyed.

RECOMMENDATIONS

It is recommended that the service charges summarized in Table ES-1 be adopted by the District. The proposed rates should be re-evaluated in approximately three to five years to ensure that the District's revenue requirements and goals are being met.

**Figure ES-1
Comparison of Annual Sewer Rates, Average Residential Customer**



SEWER RATE ANALYSIS

INTRODUCTION

The purpose of this rate study is to update District sewer rates based on changes in demand patterns and system revenue requirements that have occurred since the District last established rates. The rate study will calculate detailed rates for the next six years and present a longer term finance plan to achieve the District's primary objectives of:

- Maintaining high quality, reliable sewer service at affordable prices for customers;
- Sustain stable revenue generation adequate to fund system needs;
- Minimizing the District's long-term costs by avoiding further debt where possible; and
- Pay off the existing enterprise fund deficit.

Implementing the recommendations contained in this report will help SLSSD keep its sewer system adequately funded to maintain its current infrastructure and continue to provide dependable service to its customers.

PROJECTED REVENUE NEEDS

Before calculating detailed rates for individual users, it is important to consider the overall plan for meeting the future revenue needs of the District. The first step in this process is to project future expenditures. Historic and projected expenditures for the District from 2013 to 2025 are shown in Figure 1 (page 1-3). Future expenditures can be grouped into three categories:

- **Operation and Maintenance Expenditures** – These are the annual costs of running the system. They include items such as salary and benefit costs for District staff, equipment and supplies, power costs, and all other costs associated with doing business throughout the year. Operation and maintenance (O&M) costs are relatively constant from year to year and tend to grow with the rate of inflation.
- **Debt Service** – For the last several years, sewer service rates have been insufficient to meet annual District expenditures. As a result, the SLSSD enterprise fund owes a significant amount of money to Jordanelle Special Service District (JSSD) for past system maintenance. One goal of this study is to determine how the District could pay off this debt and become solvent. The SLSSD enterprise fund currently has cash reserves of approximately \$23,000, but owes \$31,100 to JSSD for past services provide. As a result, the fund has a negative unrestricted fund balance.

To restore a positive fund balance, an amount has been set budgeted for to be paid toward reimbursement of JSSD. This budget item was set such that the enterprise fund will be fully paid off by 2023. The payoff duration was set based on reasonable rate increases the District could implement in conjunction with the desire to minimize the duration of repayment. Figure 2 shows the proposed enterprise fund balance over the examined ten year period. At the end of the payoff period, the fund will have a positive balance approximately equal to 6 months of operation and maintenance expenditures.

- **Capital Improvement Expenditures** – These are costs for constructing new facilities within the District. This can include completely new facilities or replacement of existing facilities. Capital improvement expenditures are usually the most volatile of expenditure categories. Because O&M and debt service costs are basically fixed, budgets are usually balanced by increasing or decreasing capital improvement expenditures as necessary. For the planning window of this study, only one significant capital improvement project is expected. This is the replacement/upsizing of existing pumps at the District’s sewer lift station¹. Beyond the planning window, however, there are several major capital improvements that will be required in the District. This includes the expansion of the existing lagoons, the eventual reconstruction and upsizing of the existing lift station, and the ongoing rehabilitation and replacement of existing sewer pipelines and manholes.

As a result, the expenditures identified in this category account for rehabilitation and replacement of existing facilities. As with most things, each component of a sewer system has a finite service life. As such, it is necessary to continually budget money for the rehabilitation or replacement of these system components. If adequate funds are not set aside for regular investment into the system, the system will fall into disrepair and be incapable of providing the level of service customers in the District expect.

To maintain the sewer system in good operating condition, the District’s annual investment into the system will need to be approximately equal to the replacement value of the system divided by its estimated service life. Based on accounting data provided to BC&A, the District’s infrastructure is expected to depreciate by approximately \$9,600 in 2016. That depreciation amount should be approximately equal to the infrastructure’s valuation divided by the expected service life.

While it would be ideal to fund rehabilitation and replacement at the full amount of depreciation identified above, it is understood that the number of customers connected to the system now is far less than the number of customers the system can ultimately serve. To avoid saddling the existing customers with the full cost of replacing a system that will ultimately be used by many others, the rehabilitation and replacement budget was reduced to only a portion of depreciation. This was calculated based on the percentage of existing customers to the total amount of customers expected to be served by the system. In 2016, this equates to a budget of \$5,240. This amount was then increased to account for growth and inflation in the following years.

If the recommended system investment budget identified above is added to the District’s projected O&M costs, the total represents an estimate of recommended long-term level of funding based on system needs. As shown in Figure 1, the District’s historic investment in the system generally falls short of the long-term level of funding recommendations. This gap will become larger and larger in future years unless existing rates are increased.

¹ It is understood that the proposed Strawberry Cove development may construct a significant number of new capital improvements. However, since these improvements will be funded and built by the developer, they will not be considered in this report.

Figure 1
10-Year Revenue and Expenditures - SLSSD Sewer

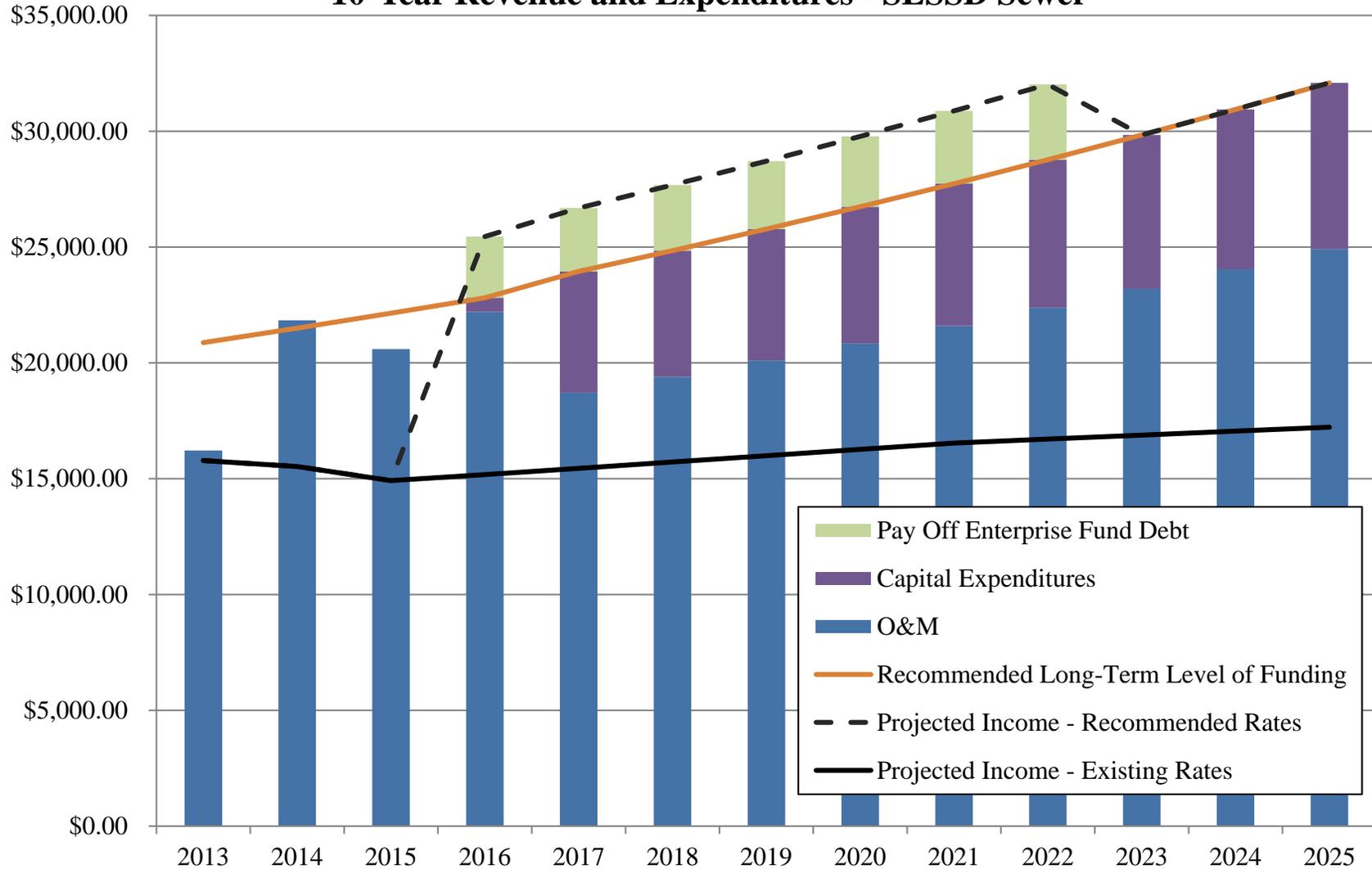
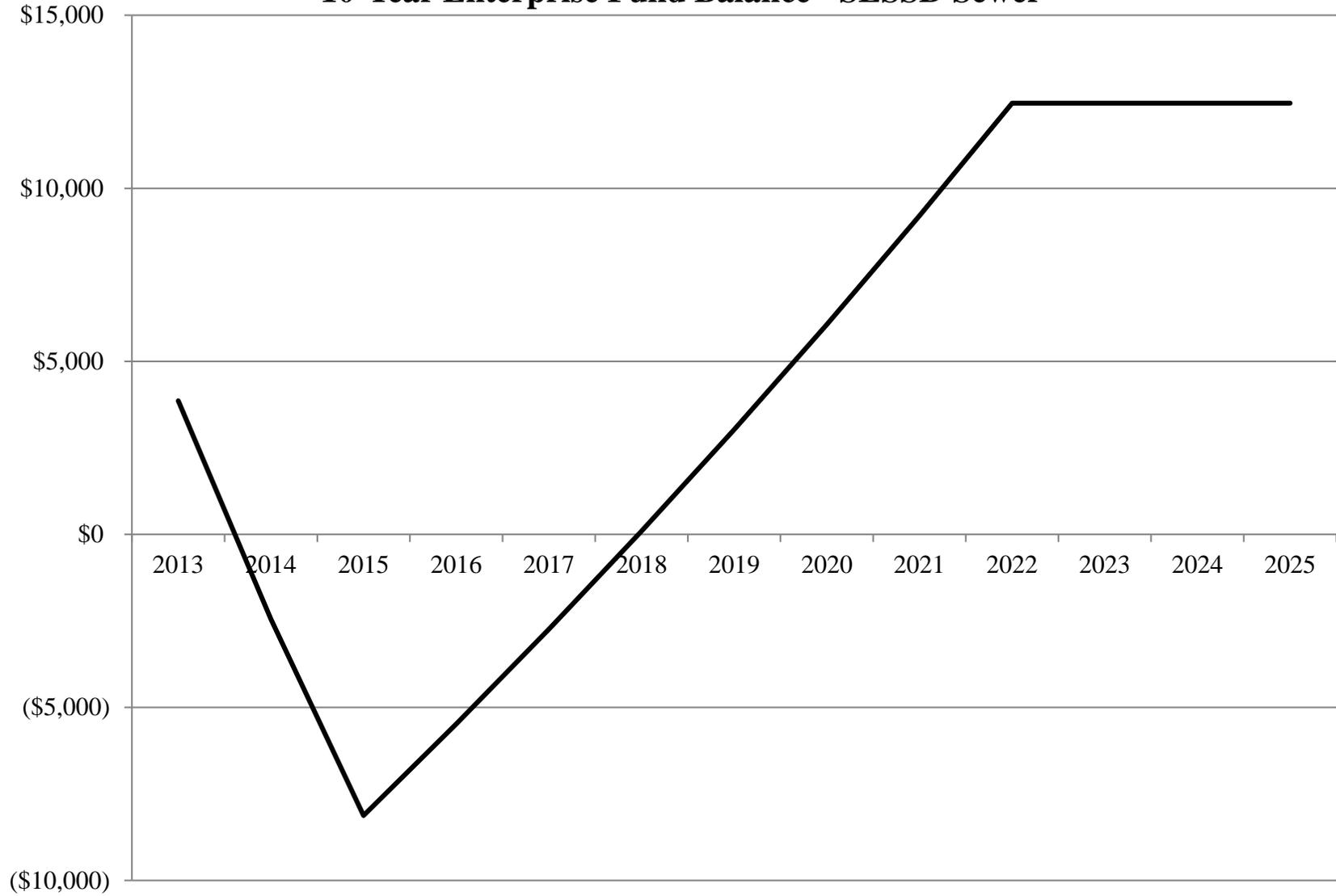


Figure 2
10-Year Enterprise Fund Balance - SLSSD Sewer



10-YEAR BUDGET PLAN

With the expected expenditures outlined above, it is possible to prepare a future budget plan. A budget plan has been developed and is shown with projected expenditures in Figure 1. The process of creating this budget plan was as follows:

1. **Identify projected revenue based on existing sewer rates** – Using the District’s existing sewer rates, Bowen, Collins & Associates (BC&A) calculated the revenue the District could expect to receive over the next 10 years. These projections include consideration of future system growth. As can be seen in Figure 1, projected revenue based on existing rates falls short of projected expenditures.
2. **Identify recommended level of funding based on long-term system needs** – The long-term level of funding shown in Figure 1 is the amount of revenue needed to satisfy the expected capital expenditures combined with operation and maintenance costs.
3. **Create a plan to transition from existing revenue to revenue adequate to support long-term system needs** – To close the gap between projected revenue from existing rates and recommended revenue for long-term system needs, it is recommended that existing rates be increased over the next several years. To minimize the impact and potential for “rate shock” on customers, it is typically recommended that this increase be completed gradually over several years. However, as the existing revenues are significantly short of the required amount and there is an urgency to pay off the enterprise fund deficit, it is recommended an initial large revenue increase be made in 2016, followed by more modest increases as shown in Table 1. To generate the required revenue shown in the figure, it is recommended that annual increases to existing rates occur such that revenue is increased as shown in Table 1.

Table 1
Recommended Annual Revenue Increase for the 10-Year Budget Plan

| Year | Revenue Increase | Approx. Average Rate Increase |
|-------------|-------------------------|--------------------------------------|
| 2016 | 68.6% | 67.2% |
| 2017 | 4.9% | 2.8% |
| 2018 | 3.7% | 1.6% |
| 2019 | 3.7% | 1.7% |
| 2020 | 3.7% | 1.8% |
| 2021 | 3.7% | 1.8% |
| 2022 | 3.7% | 1.8% |
| 2023 | -6.9% | -8.8% |
| 2024 | 3.7% | 1.9% |
| 2025 | 3.7% | 1.9% |

After paying off debt and bringing the enterprise fund to a level equal to 6 months of operation and maintenance expenditures, the rates can be lowered by approximately 8.8% in 2023.

4. **Modify capital improvement expenditures to fit within the identified budget** – As noted previously, there is not much change that can be made to O&M or debt service expenditures. As a result, any modifications required to meet the recommended budget plan will need to come through capital improvement expenditures. Although the District does not have a detailed capital improvement plan, the capital expenditures shown in Figure 2-1 represent the level of expenditures that can be supported by the budget plan.

DETAILED RATE CALCULATION

With an overall revenue plan in place, the next step in the rate calculation process is a detailed cost-of-service rate analysis. This analysis focuses on four major tasks:

1. **Projecting Sewer Use:** Future sewer sales were estimated by examining current use patterns and by projecting sewer system growth for the next several years.
2. **Calculating Revenue Requirements:** Total revenue requirements for the system were projected for the next several years based on the budget plan outlined earlier in this chapter. Non-rate revenue was deducted from the total to give the net revenue requirement to be recovered from rate payers.
3. **Cost Allocation:** This analysis generally follows the design cost-causative procedure recommended by the Water Pollution Control Federation (WPCF), American Society of Civil Engineers (ASCE), and American Public Works Association (APWA)². The essential principle of this method is that wastewater revenue should be recovered from classes of customers in proportion to the cost of serving those customers. All connections have been grouped into a two customer classes, resulting in a standard rate for each class.
4. **Wastewater Rate Design:** Wastewater rates were calculated to recover the allocated cost of service based on operation and maintenance costs and capital improvement costs.

The remainder of this report details the results of each of these four major tasks. Detailed rate tables from the model used to develop the rate recommendations are located in the Appendix.

KEY ASSUMPTIONS

The results presented in this report are based on the following assumptions:

1. The District operating fund will continue to be a self-funding enterprise fund.
2. The study follows the basic recommended methodologies of the joint publication, "Financing and Charges for Wastewater Systems". Only the "cash basis" approach has been used to allocate costs to users.
3. This wastewater rate study is based on projections of future wastewater production and projected system operation, maintenance, and improvement costs. These projections are

²Water Pollution Control Federation, American Society of Civil Engineers, and American Public Works Association. Financing and Charges for Wastewater Systems, 1984.

based on current economic conditions and wastewater use patterns. Because conditions may change over time, it is recommended that the District review the wastewater rates periodically and adjust them as needed to provide a revenue stream that will adequately fund operation and maintenance costs as well as needed rehabilitation and replacement projects. It is also recommended that a comprehensive review and updating of wastewater rates be undertaken in three to five years so that the basic analytical foundations of this study can be re-evaluated.

PROJECTING WASTEWATER PRODUCTION

Historic Indoor Water Use

The District currently bills 95 accounts and provides sewer service to approximately 46 of those accounts which are connected to the SLSSD sewer system. The District separates accounts into two classes as described below:

- **Connected** – This class represents all the customers connected into the SLSSD sewer system and possessing the ability to contribute wastewater flows in the SLSSD system at any time. This customer class currently accounts for 48 percent of the accounts and 100 percent of the sewer flows of the system. The volume and strength of wastewater flows are not differentiated within this class.
- **Standby: Reservation Fee** – This class of customers is for customers/developers who are not presently connected into the system but wish to hold sewer system connection rights for future development. A customer who consistently pays the standby reservation fee will have a sewer connection right available for their future development.

SLSSD does not meter sewage flows. Lacking direct evidence of flow rates, it was assumed that the typical sewer flow rate can be based on average indoor water use for other special service districts in Wasatch County (325 gallons per day). Furthermore, as it was assumed that each connection will be inhabited half the time (as most connections are cabins), an average daily indoor water use of 162.5 gallons per connection was used for the purposes of this study. The number of accounts in each customer class, along with their estimated indoor water use in 2015, is summarized in Table 2 (below).

Table 2
Account and Indoor Water Use Summary in 2015

| Customer Class | Number of Accounts in 2015 | 2015 Indoor Water Use (kgal) ¹ | 2015 Average Monthly Flows (kgal) ¹ |
|----------------|----------------------------|---|--|
| Connected | 46 | 2,728 | 227 |
| Standby | 49 | 0 | 0 |
| Total | 95 | 2,728 | 227 |

¹Based on an estimated 162.5 gallons per connection per day average flow

Projected Accounts

The District has historically seen a wide range of growth rates depending on economic conditions in the area. However, overall historic growth has generally been relatively slow. A brief description of expected growth for each customer class is found below:

- Connected** – There is potential for development of a large subdivision (Strawberry Cove) which could potentially bring 88 additional connections into the SLSSD system (with future expansion of an additional 38 units). However, based on discussions with District personnel and the Strawberry Cove developer, it was determined that growth in the area may continue to proceed at a relatively modest rate. Due to historically slower growth and the revenue risk associated with basing sewer system rates on overly high growth, it was assumed that there will only be an average of two new connections into the SLSSD system per year (3-4% annual growth of active accounts).
- Standby: Reservation Fee** – While standby reservation fees have been an important part of how the District has historically secured capacity for future sewer growth, it is expected that the number of customers paying reservation fees will slowly decrease as development is completed and these customers are converted into active connections. For the purposes of this study, it was therefore assumed that there will be a net decrease of one stand by connection per year.

The projected growth rates and number of accounts by customer type are summarized in Table 3.

Table 3
Projected Growth in System Accounts

| Customer Class | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Connected | 48 | 50 | 52 | 54 | 56 | 58 |
| Standby | 48 | 47 | 46 | 45 | 44 | 43 |
| Total | 96 | 97 | 98 | 99 | 100 | 101 |
| % Connection Growth | 4.35% | 4.17% | 4.00% | 3.85% | 3.70% | 3.57% |
| % Total Growth | 1.05% | 1.04% | 1.03% | 1.02% | 1.01% | 1.00% |

Projected Indoor Water Use

Future indoor water use was projected by multiplying the average use per account in 2015 from Table 2 by the projected number of accounts in Table 3. Using this methodology, the projected growth in total indoor water use is shown in Table 4.

Table 4
Projected Growth in Indoor Water Use

| Customer Class | Use per Account | Amount (kgal) | | | | | |
|----------------|-----------------|---------------|--------------|--------------|--------------|--------------|--------------|
| | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Connected | 59.3 | 2,847 | 2,966 | 3,084 | 3,203 | 3,322 | 3,440 |
| Standby | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | - | 2,847 | 2,966 | 3,084 | 3,203 | 3,322 | 3,440 |

Infiltration and Inflow

Infiltration and inflow is the intrusion of groundwater or stormwater into the sewer system through cracked pipes, broken and offset joints, improper connections, leaky manholes, etc. In areas with aging sewer lines and high groundwater, infiltration can actually be the largest component of flow being conveyed in the sewer. Infiltration is very difficult to measure because it varies across the service area based on climate conditions, water table levels, pipe diameter, and pipe condition. Because of the difficulty of identifying the source of infiltration, the District does not bill sewer accounts for infiltration directly. Thus, infiltration and inflow are not included in the rate model.

Peaking Characteristics

Unlike water used for outdoor irrigation, indoor water use is relatively constant year round³. As a result, the calculation of sewer rates does not need to consider peak day demands. However, sewer flow does tend to vary significantly over the course of a single day and the peak hour demand can impose constraints on the sewer system. For a sewer system with different user classifications (commercial, industrial etc.), peaking factors will differ significantly from user to user. However, because SLSSD has one predominant user type (residential), the peaking factor was assumed to be the same for all connections. Because there is no separate class of user imposing special peaking demands on the system, peaking characteristics ultimately will not affect how the sewer rates are structured.

Strength Characteristics

Strength characteristics of wastewater are generally used to scale the cost of treatment between different users. For example, an industrial connection may produce stronger wastewater than a residential connection, thus meriting a higher sewer rate to cover the increased treatment cost. Because there is no available data regarding wastewater strength in the District and because all sewer connections have been grouped in the same customer class, wastewater strength is assumed to be the same for all users and will therefore have no special impact on rates.

³ Because of the seasonal nature of residency in the District, indoor water use does vary throughout the year depending on the number of homes occupied. However, since all customers are of the same customer class (residential) and have the same general pattern, this variation does not need to be represented in the rate model.

CALCULATING REVENUE REQUIREMENTS

There are two methods for determining revenue requirements for the District: the cash basis and utility basis. Wastewater rates were developed under the cash basis only.

Impact Fee Revenue

Because a detailed capital improvement plan is not finalized and there are no expansion related potential projects identified, impact fee revenue and connection fees associated with system growth were neglected during this study. It was assumed that any potential expansion costs and impact fee revenue would offset each other.

Non-Rate Revenue

The projected non-rate revenue for the District is summarized in Table 5 (next page). The projected revenue amounts are based on a 3% inflation rate and the connection growth rates shown in Table 3. This non-rate revenue is the net income from activities not associated with sewer sales. It includes penalty fees and interest revenue.

Table 5
Projected Non-Rate Revenue

| Item | Actual 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|------------------|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Penalty Fees | \$199 | \$200 | \$208 | \$216 | \$225 | \$234 | \$244 |
| Interest Revenue | \$9 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total | \$209 | \$200 | \$208 | \$216 | \$225 | \$234 | \$244 |

District Expenditures

The projected District expenditures for the planning period are summarized in Table 6 (below). Included in the table are the projected total costs for the three major categories of expenditures: operations and maintenance, debt service, and capital expenditures. These categories are discussed in more detail in following sections.

Table 6
Projected Revenue Requirements

| Item | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| O&M | \$22,200 | \$18,709 | \$19,396 | \$20,106 | \$20,842 | \$21,603 |
| Debt Service | \$2,645 | \$2,738 | \$2,834 | \$2,934 | \$3,037 | \$3,143 |
| Capital Improvements | \$610 | \$5,241 | \$5,452 | \$5,672 | \$5,899 | \$6,135 |
| Total Expenditures | \$25,455 | \$26,688 | \$27,683 | \$28,712 | \$29,778 | \$30,881 |

Operation and Maintenance Costs: The projected operation and maintenance (O&M) costs for the District were based on the District's actual historical expenses in conjunction with the budgeted

amount for 2016. A detailed list of all O&M budget categories is included as part of the rate model in Appendix D. Beyond 2016, it has been assumed that most of the O&M cost categories will annually increase at an assumed inflation rate of 3.0 percent added to half the connected growth rate (shown in Table 3). The only O&M subcategories that do not use that combined growth rate are utilities and services costs. Those two subcategories are annually increased at a rate of 3.0 percent (assumed inflation rate) added to the full connected growth rate (shown in Table 3). The increased rate for those two categories is because their associated costs are more directly related to the sewage flow rate and thus more closely tied to the number of connections added to the sewer system.

Debt Service Costs: The projected debt service costs are a result of the District's intent to fully reimburse the fund by 2024. The enterprise fund currently has a cash balance of approximately \$23,000, but owes JSSD just over \$31,000 for past operation and maintenance activities. This leaves a net deficit in the enterprise fund of about \$8,000. It has been assumed that the District will make payment towards this deficit over the next 7 years; upon which time the fund will have a positive balance approximately equal to 6 months of operation and maintenance expenditures. The amount will then be maintained to be used for emergencies or other extenuating circumstances. Once the debt to JSSD is paid off and the reserve fund is at an appropriate level, sewer rates can be re-examined. As discussed previously, it is expected that rates can be reduced slightly at this point to match long-term level of funding requirements.

Capital Improvement Costs: For the planning window of this study, only one significant capital improvement project is expected. This is the replacement/upsizing of existing pumps at the District's sewer lift station. Beyond the planning window, however, there are several major capital improvements that will be required in the District. This includes the expansion of the existing lagoons, the eventual reconstruction and upsizing of the existing lift station, and the ongoing rehabilitation and replacement of existing sewer pipelines and manholes. The expenditures that have been budgeted for in rate study under this category account for the eventual rehabilitation and replacement of existing facilities.

To maintain the sewer system in good operating condition, it is recommended that the District's annual investment into the system be approximately equal to the replacement value of the system divided by its estimated service life. Based on accounting data provided to BC&A, the District's infrastructure is expected to depreciate by approximately \$9,600 in 2016. That depreciation amount should be approximately equal to the infrastructure's valuation divided by the expected service life. This represents the District's long-term goal for investment into the system.

While it would be ideal to fund rehabilitation and replacement at the full amount of depreciation identified above, it is understood that the number of customers connected to the system now is far less than the number of customers the system can ultimately serve. To avoid saddling the existing customers with the full cost of replacing a system that will ultimately be used by many others, the rehabilitation and replacement budget was reduced to only a portion of depreciation. This was calculated based on the percentage of existing customers to the total amount of customers expected to be served by the system. In 2017, this equates to a budget of \$5,240. This amount was then increased to account for growth and inflation in the following years.

COST ALLOCATIONS

A key step in a cost-causative wastewater rate analysis is the allocation of costs to customer service characteristics. The allocation approach used in this study reflects the basic approaches recommended by WPCF, ASCE, and APWA.

Customer Service Characteristics

This approach recommends the allocation of costs into one of four cost allocation categories:

- **Volume Costs** – Volume costs refer to costs that are determined by the volume of wastewater generated in the system.
- **Capacity Costs** – Capacity costs are costs determined by the peak wastewater production of system users. This category would include such items as the design and construction of major trunk lines since they are sized based on peak flow rates.
- **Strength Costs** – Strength costs are those costs determined by biochemical oxygen demand (BOD) or total suspended solids (TSS) concentrations of the wastewater.
- **Customer Related Costs** – Customer related costs are any costs independent of the quantity or quality of wastewater generated. This category is mostly limited to administrative services such as the cost of generating and sending out bills each month.

Because all of the District's active customers are being grouped in a single class, strength costs will not differ from customer to customer. For this reason, each of the revenue requirements discussed previously was divided between volume costs, capacity costs, and customer related costs only. That division will be used to assist in the determination of rate differences between the connected and standby classes. However, the strength cost category has been left in the rate model so that it can be added back into future rate studies as new customer classes arrive.

Detailed cost divisions have been completed in the sewer rate model (see Tables A12 and A13 of the Appendix). In each case, these allocations are based on professional engineering judgment and knowledge of system operations. Table A12 in the Appendix provides a division by cost allocation category for O&M expenditures. Table A13 in the Appendix provides the same information for capital expenditures.

Using the percentages assigned to each budget category, the system revenue costs are distributed among the customer service characteristics. This is also shown in detail in the rate model. The total revenue requirement for each customer service characteristic is given in Table A15 of the Appendix. Table A16 of the Appendix shows the total cost allocation for each customer class.

CURRENT WASTEWATER RATE STRUCTURE

Existing sewer rates for each customer class are shown in Table 7 (below). The existing rates are not based on volumetric or strength characteristics. Each customer connected into the system is charged the same flat rate. Each customer on standby is charged a separate flat rate. SLSSD issues bills once a quarter; however the table below shows the equivalent costs per month.

**Table 7
Existing Monthly Sewer Rates**

| Customer Class | Existing Rate |
|-----------------------|----------------------|
| Connected | \$16.00 |
| Standby | \$10.00 |

In general, due to the uniformity of the customers of the system, the District's existing sewer rate structure appears to be a reasonable, cost based structure. Total projected revenues from existing District sewer rates are shown in Table 8 (below). As shown in the table, the District will continue to find itself in a deficit which will increase over time if rates are not adjusted. The table indicates an annual budget shortfall increasing from \$29,000 in 2016 to over \$40,000 by 2021.

**Table 8
Projected Revenue Based on Existing Sewer Rates**

| Item | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|--|------------------|------------------|------------------|------------------|------------------|------------------|
| Projected Revenue (Non-Rate and Rate) | \$14,976 | \$15,240 | \$15,504 | \$15,768 | \$16,032 | \$16,296 |
| Projected Revenue Requirements | \$25,255 | \$26,480 | \$27,466 | \$28,487 | \$29,543 | \$30,637 |
| Projected Difference | -\$10,279 | -\$11,240 | -\$11,962 | -\$12,719 | -\$13,511 | -\$14,341 |

CALCULATED COST-OF-SERVICE RATES

Following the recommended cost-of-service methodology, required rates to satisfy the District's projected revenue requirements were calculated as summarized in Table 9.

Table 9
Calculated Cost-of-Service Rates

| Monthly Base Rate | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Connected | \$17.09 | \$17.69 | \$18.15 | \$18.62 | \$19.11 | \$19.62 |
| Standby | \$17.09 | \$17.69 | \$18.15 | \$18.62 | \$19.11 | \$19.62 |
| Volume Rate | | | | | | |
| <i>Volume Component</i> | | | | | | |
| <i>Connected</i> | \$1.39 | \$1.41 | \$1.41 | \$1.41 | \$1.41 | \$1.42 |
| <i>Standby</i> | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| <i>Capacity Component</i> | | | | | | |
| <i>Connected</i> | \$0.56 | \$0.57 | \$0.57 | \$0.57 | \$0.57 | \$0.58 |
| <i>Standby</i> | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| <i>Strength Component</i> | | | | | | |
| <i>Connected</i> | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| <i>Standby</i> | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Total Volume Rate | | | | | | |
| Connected | \$1.96 | \$1.99 | \$1.99 | \$1.99 | \$1.99 | \$2.00 |
| Standby | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Industrial Surcharges | | | | | | |
| Volume Surcharge (\$/kgal) | \$1.39 | \$1.41 | \$1.41 | \$1.41 | \$1.41 | \$1.42 |
| Capacity Surcharge (\$/gpd) | \$0.0069 | \$0.0070 | \$0.0070 | \$0.0070 | \$0.0070 | \$0.0070 |
| BOD Surcharge (\$/lb) | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 |
| TSS Surcharge(\$/lb) | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 |

RECOMMENDED FUTURE RATES

The cost-of-service rates summarized above provide a good starting point for developing recommended rates for the system. Before finalizing the rates however, it is necessary to make a few adjustments to account for some of the practical limitations in the rate making process. Items to consider in developing final rates include:

1. **Wastewater Strength Data Availability** – For the customers in the District’s system, there is no practical way of measuring strength on a regular basis. As a result, it does not make sense to charge current customers separately based on strength. Consequently, no costs have been assigned to strength as shown in the cost-of-service rates above. However, the rate model could be used in the future to calculate equitable rates if the District ever has a request to provide service to an industrial or other high strength user.
2. **Rate Stability** – In general, it is preferable for at least some component of the wastewater charge to be based on the volume of water used. However, putting all costs into the monthly base rate does provide some additional revenue stability to the District and simplifies billing and collection. The District also has the problem that water use of the existing customers is not currently metered. Given the magnitude of recommended rate changes over the next few years, the District has indicated a preference to continue forward with

the same rate structure for this planning window, charging only a monthly base rate. In future rate studies, the District can revisit this issue and consider adding a volumetric charge to its sewer rates if desired.

Based on these considerations, recommended wastewater rates will be limited to a flat monthly base charge. The monthly base charge is the amount charged to existing users to be connected to the system, regardless of the amount of wastewater discharged. There will be no separate charges based on wastewater strength or volume of water used unless merited by specific circumstances. Following this approach, the recommended wastewater rates necessary to meet projected revenue requirements for the next six years are summarized in Table 10.

Table 10
Calculated/Recommended Monthly Rates

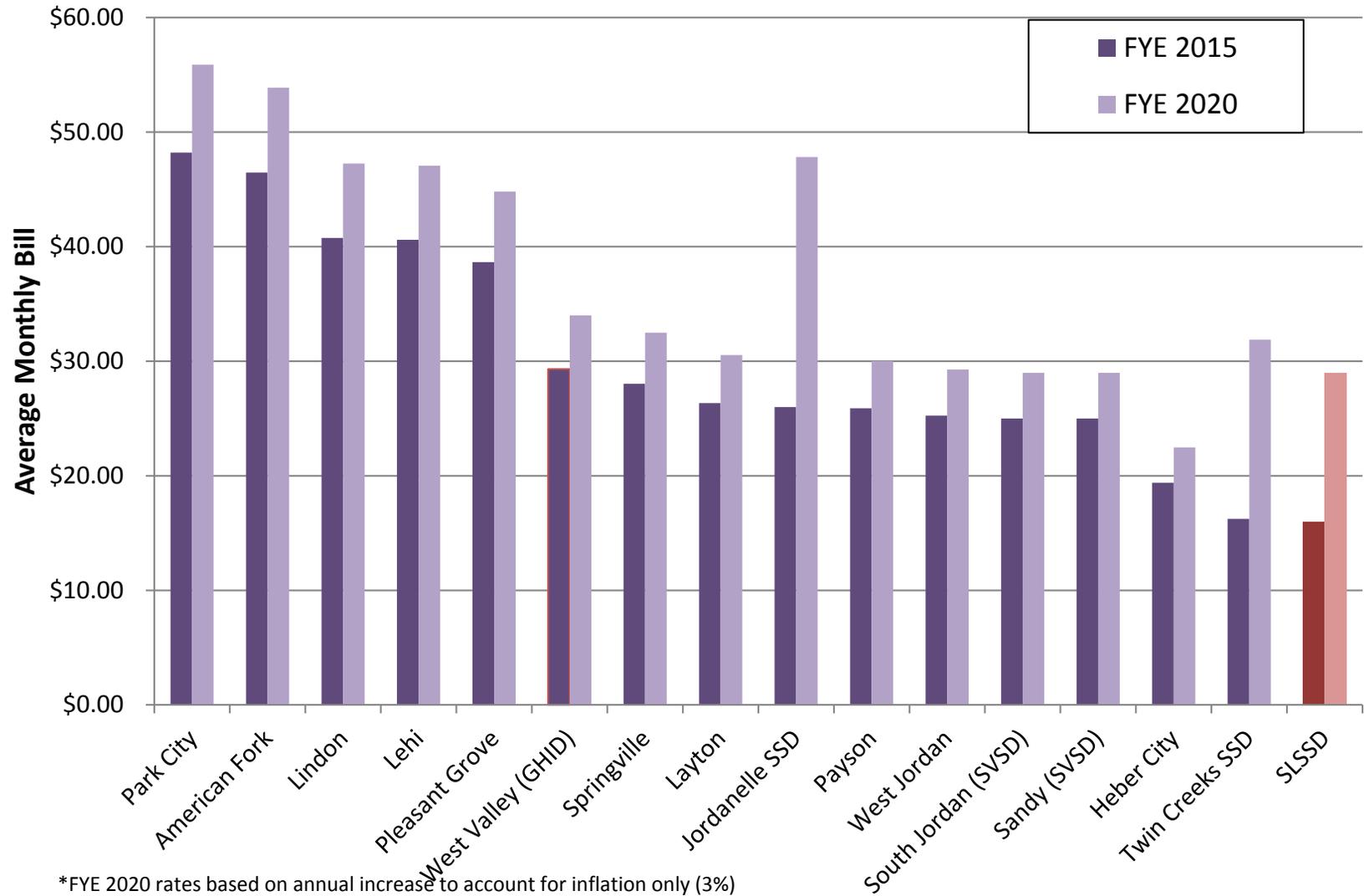
| Customer Class | Existing | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---------------------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Connected | \$16.00 | \$26.76 | \$27.51 | \$27.96 | \$28.44 | \$28.95 | \$29.48 |
| Standby | \$10.00 | \$17.09 | \$17.69 | \$18.15 | \$18.62 | \$19.11 | \$19.62 |
| Rate Increase Percentage | | | | | | | |
| Connected | - | 67.2% | 2.8% | 1.6% | 1.7% | 1.8% | 1.8% |
| Standby | - | 70.9% | 3.5% | 2.6% | 2.6% | 2.6% | 2.6% |

As can be seen in Table 10, the recommended change in rates is initially very aggressive. It is typically recommended that rate changes occur gradually over several years until the District reaches its target yearly budget to avoid shocking customers with a sudden rate increase. However, if the existing customers are made aware that revenue has fallen well short of expenditures over the last several years, the sudden increase in rates may be more readily accepted. The sudden increase of rates would prevent the District from further falling into deficit and allow pay off of the enterprise fund quicker. After the initial increase in 2016, the District should plan to continue increasing rates gradually to keep up with inflation. In 2023, upon fully paying off the current enterprise fund deficit and building up the fund to have a surplus of 6 months of operation and maintenance expenditures, the rates can likely be lowered.

RATE COMPARISON

Figure 3 shows a comparison of SLSSD's current and proposed sewer rates with other communities in Utah. The figure displays the current average monthly sewer rate and the estimated sewer rate in 2020 for several sewer service entities. As shown in the figure, the District's current rates are extremely low compared to other cities and service districts. With the proposed rate increase over the next several years, the cost of service in SLSSD will still be among the lowest of those entities surveyed. SLSSD should plan to re-evaluate sewer rates again in 3-5 years in order to assure that the District's revenue requirements are being met.

Figure 3
Comparison of Annual Sewer Rates, Average Residential Customer



APPENDIX A RATE MODEL

**Table A-0
10-Year Budget Plan - Sewer**

| | Historic Year | | | | | Projected Year | | | | | | | | |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|
| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | |
| Total ERUs | 95 | 95 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | |
| % Growth from Previous Year | - | 0.00% | 0.00% | 1.05% | 1.04% | 1.03% | 1.02% | 1.01% | 1.00% | 0.99% | 0.98% | 0.97% | 0.96% | |
| Expenditures | | | | | | | | | | | | | | |
| O&M | \$16,217.69 | \$21,837 | \$20,593 | \$22,200 | \$18,709 | \$19,396 | \$20,106 | \$20,842 | \$21,603 | \$22,390 | \$23,205 | \$24,049 | \$24,921 | |
| Debt Service | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | |
| Total Capital Expenditures | \$0 | \$0 | \$0 | \$610 | \$5,241 | \$5,452 | \$5,672 | \$5,899 | \$6,135 | \$6,380 | \$6,634 | \$6,897 | \$7,170 | |
| Pay Off Enterprise Fund Debt | \$0 | \$0 | \$0 | \$2,645 | \$2,738 | \$2,834 | \$2,934 | \$3,037 | \$3,143 | \$3,253 | \$0 | \$0 | \$0 | |
| <i>Total Expenditures</i> | <i>\$16,218</i> | <i>\$21,837</i> | <i>\$20,593</i> | <i>\$25,455</i> | <i>\$26,688</i> | <i>\$27,683</i> | <i>\$28,712</i> | <i>\$29,778</i> | <i>\$30,881</i> | <i>\$32,023</i> | <i>\$29,839</i> | <i>\$30,946</i> | <i>\$32,092</i> | |
| Capital Expenditures from Bond Proceeds | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | |
| Capital Expenditures | \$0 | \$0 | \$0 | \$610 | \$5,241 | \$5,452 | \$5,672 | \$5,899 | \$6,135 | \$6,380 | \$6,634 | \$6,897 | \$7,170 | |
| Income | | | | | | | | | | | | | | |
| Connection Fees | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | |
| Other Non-Rate | \$1,070 | \$816 | \$209 | \$200 | \$208 | \$216 | \$225 | \$234 | \$244 | \$253 | \$263 | \$274 | \$285 | |
| Sales - Existing Rates | \$14,712 | \$14,712 | \$14,712 | \$14,976 | \$15,240 | \$15,504 | \$15,768 | \$16,032 | \$16,296 | \$16,457 | \$16,619 | \$16,780 | \$16,941 | |
| <i>Projected Income - Existing Rates</i> | <i>\$15,782</i> | <i>\$15,528</i> | <i>\$14,921</i> | <i>\$15,176</i> | <i>\$15,448</i> | <i>\$15,720</i> | <i>\$15,993</i> | <i>\$16,266</i> | <i>\$16,540</i> | <i>\$16,711</i> | <i>\$16,882</i> | <i>\$17,054</i> | <i>\$17,226</i> | |
| System Investment Goal | \$4,656.72 | | | \$610.03 | \$5,241 | \$5,452 | \$5,672 | \$5,899 | \$6,135 | \$6,380 | \$6,634 | \$6,897 | \$7,170 | |
| Recommended Long-Term Level of Funding | \$20,874 | \$21,501 | \$22,146 | \$22,810 | \$23,950 | \$24,848 | \$25,778 | \$26,741 | \$27,738 | \$28,770 | \$29,839 | \$30,946 | \$32,092 | |
| Recommended Rate Increases | | | | 68.6% | 4.9% | 3.7% | 3.7% | 3.7% | 3.7% | 3.7% | 6.9% | 3.7% | 3.7% | |
| Sales Revenue With Increase | \$14,712 | \$14,712 | \$14,712 | \$25,255 | \$26,480 | \$27,466 | \$28,487 | \$29,543 | \$30,637 | \$31,770 | \$29,576 | \$30,672 | \$31,807 | |
| <i>Projected Income - Recommended Rates</i> | <i>\$15,782</i> | <i>\$15,528</i> | <i>\$14,921</i> | <i>\$25,455</i> | <i>\$26,688</i> | <i>\$27,683</i> | <i>\$28,712</i> | <i>\$29,778</i> | <i>\$30,881</i> | <i>\$32,023</i> | <i>\$29,839</i> | <i>\$30,946</i> | <i>\$32,092</i> | |

Table A-1
Strawberry Lakeview Special Service District - Sewer Rate Study
Estimated Indoor Water Use
(kgal)

| Customer Class | 2013 | | | 2014 | | | 2015 | | | Planning Use/ERU | Use/ERU (kgal/month) |
|----------------|--------------|-----------|--------------|--------------|-----------|--------------|--------------|-----------|--------------|------------------|----------------------|
| | Use | ERUs | Use per ERUs | Use | ERUs | Use per ERUs | Use | ERUs | Use per ERUs | | |
| Connected | 2,728 | 46 | 59.3 | 2,728 | 46 | 59.3 | 2,728 | 46 | 59.3 | 59.3 | 4.9 |
| Standby | 0 | 49 | 0.0 | 0 | 49 | 0.0 | 0 | 49 | 0.0 | 0.0 | 0.0 |
| Total | 2,728 | 95 | 28.7 | 2,728 | 95 | 28.7 | 2,728 | 95 | 28.7 | 28.7 | 2.4 |

Table A-2
Strawberry Lakeview Special Service District - Sewer Rate Study
Projected ERUs

| Customer Class | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|----------------|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | % Active Growth | 1.05% | 1.04% | 1.03% | 1.02% | 1.01% | 1.00% | 0.99% | 0.98% | 0.97% | 0.96% |
| Connected | | 48 | 50 | 52 | 54 | 56 | 58 | 60 | 62 | 64 | 66 |
| Standby | | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 |
| Unused | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unused | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unused | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unused | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 |

Table A-3
Strawberry Lakeview Special Service District - Sewer Rate Study
Projected Annual Indoor Water Use

| Customer Class | Use/ERU. | Amount (kgal) | | | | | | | | | |
|----------------|----------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Connected | 59.3 | 2,847 | 2,966 | 3,084 | 3,203 | 3,322 | 3,440 | 3,559 | 3,677 | 3,796 | 3,915 |
| Standby | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | - | 2,847 | 2,966 | 3,084 | 3,203 | 3,322 | 3,440 | 3,559 | 3,677 | 3,796 | 3,915 |

Table A-4
Strawberry Lakeview Special Service District - Sewer Rate Study
Projected Total Wastewater Flow (Peak Month)

2015
Total Flow at Lagoon (mgd)= 0.0156

| Customer Class | Amount (mgd) | | | | | |
|----------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Connected | 0.016 | 0.017 | 0.018 | 0.018 | 0.019 | 0.020 |
| Standby | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Total | 0.016 | 0.017 | 0.018 | 0.018 | 0.019 | 0.020 |

Table A-5
Strawberry Lakeview Special Service District - Sewer Rate Study
Peaking Factors

| Customer Class | Est. Peak Hour Factor |
|----------------|-----------------------|
| Connected | 2.50 |
| Standby | 2.50 |

Table A-6
Strawberry Lakeview Special Service District - Sewer Rate Study
Projected Flow Peaking Characteristics

| Customer Class | Estimated Peak Hour (mgd) | | | | | |
|----------------|---------------------------|-------------|-------------|-------------|-------------|-------------|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Connected | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 |
| Standby | - | - | - | - | - | - |
| Total | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 |

| Customer Class | Excess Over Average Day (mgd) | | | | | |
|----------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Connected | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| Standby | - | - | - | - | - | - |
| Total | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |

**Table A-7
Strawberry Lakeview Special Service District - Sewer Rate Study
Strength**

| Customer Class | BOD (mg/L) | TSS (mg/L) |
|---------------------------|-----------------------|-----------------------|
| Connected | 250 | 250 |
| Standby | - | - |
| Approximate Cost Division | 50% | 50% |

**Table A-8
Strawberry Lakeview Special Service District - Sewer Rate Study
Projected Strength Characteristics**

| Customer Class | BOD (lbs/year) | | | | | |
|-----------------------|-----------------------|--------------|--------------|--------------|--------------|--------------|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Connected | 6,210 | 6,469 | 6,728 | 6,986 | 7,245 | 7,504 |
| Standby | - | - | - | - | - | - |
| Total | 6,210 | 6,469 | 6,728 | 6,986 | 7,245 | 7,504 |

| Customer Class | TSS (lbs/year) | | | | | |
|-----------------------|-----------------------|--------------|--------------|--------------|--------------|--------------|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Connected | 6,210 | 6,469 | 6,728 | 6,986 | 7,245 | 7,504 |
| Standby | - | - | - | - | - | - |
| Total | 6,210 | 6,469 | 6,728 | 6,986 | 7,245 | 7,504 |

| Customer Class | Weighted Average (lbs/year) | | | | | |
|-----------------------|------------------------------------|--------------|--------------|--------------|--------------|--------------|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Connected | 6,210 | 6,469 | 6,728 | 6,986 | 7,245 | 7,504 |
| Standby | - | - | - | - | - | - |
| Total | 6,210 | 6,469 | 6,728 | 6,986 | 7,245 | 7,504 |

Table A-9
Strawberry Lakeview Special Service District - Sewer Rate Study
Impact Fee Revenue

| Size of Meter | Impact Fee (\$/ERU) | Actual 2014 | Estimated 2015 | Proposed 2016 | Projected 2017 | Projected 2018 | Projected 2019 | Projected 2020 | Projected 2021 |
|---------------------------------|---------------------|-------------|----------------|---------------|----------------|----------------|----------------|----------------|----------------|
| Per ERU | \$ - | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total Impact Fee Revenue | | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |

Table A-10
Strawberry Lakeview Special Service District - Sewer Rate Study
Non-Rate Revenue (Including Connection Fees)

Assumed Inflation Rate = 3.0%

| Item | GL No. | Actual 2014 | Estimated 2015 | Proposed 2016 | Projected 2017 | Projected 2018 | Projected 2019 | Projected 2020 | Projected 2021 |
|--|--------|--------------|----------------|---------------|----------------|----------------|----------------|----------------|----------------|
| <i>Operations</i> | | | | | | | | | |
| Penalty Revenue | 33000 | \$803 | \$199 | \$200 | \$208 | \$216 | \$225 | \$234 | \$244 |
| Interest Revenue | 37000 | \$12 | \$9 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total Operations Non-Rate Revenue | | \$816 | \$209 | \$200 | \$208 | \$216 | \$225 | \$234 | \$244 |
| <i>Expansion and Replacement</i> | | | | | | | | | |
| Connection Fees (Impact Fee) | | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total Expansion Non-Rate Revenue | | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total Non-Rate Revenue | | \$816 | \$209 | \$200 | \$208 | \$216 | \$225 | \$234 | \$244 |

Table A-11
Strawberry Lakeview Special Service District - Sewer Rate Study
Revenue Requirements
Cash Basis

| Item | GL No. | 2014 | 2015 | Proposed 2016 | Projected 2017 | Projected 2018 | Projected 2019 | Projected 2020 | Projected 2021 |
|---------------------------------------|---------------|------------------|------------------|--------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <i>O&M</i> | | | | | | | | | |
| Utilities | 46000 | \$1,346 | \$864 | \$900 | \$936 | \$974 | \$1,013 | \$1,054 | \$1,096 |
| JSSD Management/Maintenance | 49000 | \$9,180 | \$9,455 | \$11,000 | \$11,387 | \$11,788 | \$12,201 | \$12,629 | \$13,071 |
| Materials | 51000 | \$100 | \$0 | \$4,100 | \$1,200 | \$1,242 | \$1,286 | \$1,331 | \$1,377 |
| Supplies | 52000 | \$3,869 | \$0 | \$1,600 | \$400 | \$414 | \$429 | \$444 | \$459 |
| Services | 53000 | \$7,296 | \$10,174 | \$4,500 | \$4,682 | \$4,871 | \$5,066 | \$5,270 | \$5,480 |
| Insurance- Liability | 54000 | \$0 | \$100 | \$100 | \$104 | \$107 | \$111 | \$115 | \$119 |
| Total O&M | | \$21,837 | \$20,593 | \$22,200 | \$18,709 | \$19,396 | \$20,106 | \$20,842 | \$21,603 |
| <i>Debt Service</i> | | | | | | | | | |
| Total Debt Service | - | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| <i>Expansion and Replacement</i> | | | | | | | | | |
| | | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Rehabilitation and Replacement Budget | | \$ - | \$ - | \$610 | \$5,241 | \$5,452 | \$5,672 | \$5,899 | \$6,135 |
| Transfer to/(from) Reserve Fund | | | | \$ 2,645 | \$2,738 | \$2,834 | \$2,934 | \$3,037 | \$3,143 |
| Total Capital Outlays | | \$ - | \$ - | \$3,255 | \$7,979 | \$8,287 | \$8,606 | \$8,936 | \$9,278 |
| Total Revenue Requirements | | \$ 21,837 | \$ 20,593 | \$25,455 | \$26,688 | \$27,683 | \$28,712 | \$29,778 | \$30,881 |
| LESS: | | | | | | | | | |
| Operations Non-Rate Revenue | | \$816 | \$209 | \$200 | \$208 | \$216 | \$225 | \$234 | \$244 |
| Expansion Non-Rate Revenue | | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Net Rate Revenue Requirements | | \$ 21,021 | \$ 20,385 | \$ 25,255 | \$ 26,480 | \$ 27,466 | \$ 28,487 | \$ 29,543 | \$ 30,637 |

Table A-12
Strawberry Lakeview Special Service District - Sewer Rate Study
Cost Allocation Percentages to Service Characteristics

| Item | Volume | Capacity | Strength | Customer | Total |
|-----------------------------|--------|----------|----------|----------|-------|
| <i>O&M</i> | | | | | |
| Utilities | 100% | 0% | 0% | 0% | 100% |
| JSSD Management/Maintenance | 0% | 0% | 0% | 100% | 100% |
| Materials | 23% | 12% | 0% | 65% | 100% |
| Supplies | 23% | 12% | 0% | 65% | 100% |
| Postage | 0% | 0% | 0% | 100% | 100% |
| Tools | 23% | 12% | 0% | 65% | 100% |
| Services | 23% | 12% | 0% | 65% | 100% |
| Insurance- Liability | 0% | 0% | 0% | 100% | 100% |
| Bad Debt | 0% | 0% | 0% | 100% | 100% |
| Miscellaneous Expense | 23% | 12% | 0% | 65% | 100% |

Table A-13
Strawberry Lakeview Special Service District - Sewer Rate Study
Fixed Assets Allocations to Service Characteristics

| Item | <i>Percent</i> | | | | | | <i>Allocated Amount</i> | | | | |
|----------------|------------------|--------|----------|----------|----------|-------|-------------------------|-----------------|-------------|------------------|------------------|
| | Assets | Volume | Capacity | Strength | Customer | Total | Volume | Capacity | Strength | Customer | Total |
| Easements | \$0 | 0% | 0% | 0% | 100% | 100% | \$0 | \$0 | \$0 | \$0 | \$0 |
| Land | \$0 | 0% | 0% | 0% | 100% | 100% | \$0 | \$0 | \$0 | \$0 | \$0 |
| Pipelines | \$350,500 | 23% | 12% | 0% | 65% | 100% | \$80,615 | \$42,060 | \$0 | \$227,825 | \$350,500 |
| Pumps | \$61,356 | 23% | 12% | 0% | 65% | 100% | \$14,112 | \$7,363 | \$0 | \$39,882 | \$61,356 |
| Lagoon | \$0 | 100% | 0% | 0% | 0% | 100% | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total | \$411,856 | | | | | | \$94,727 | \$49,423 | \$0 | \$267,707 | \$411,856 |
| Percent | | | | | | | 23.0% | 12.0% | 0.0% | 65.0% | 100.0% |

Table A-17
Strawberry Lakeview Special Service District - Sewer Rate Study
Existing Rates and Projected Revenue

| Base Rate | Existing Rate | Revenue | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|------------------|----------------------|----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Connected | \$16.00 | Connected | \$9,216 | \$9,600 | \$9,984 | \$10,368 | \$10,752 | \$11,136 |
| Standby | \$10.00 | Standby | \$5,760 | \$5,640 | \$5,520 | \$5,400 | \$5,280 | \$5,160 |

| Volume Rate | Existing Rate | Revenue | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|--------------------|----------------------|----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Connected | \$0.00 | Connected | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Standby | \$0.00 | Standby | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |

| | | | | | | | |
|---------------------------------|---|------------|------------|------------|------------|------------|------------|
| Revenue - Existing Rates | - | \$14,976 | \$15,240 | \$15,504 | \$15,768 | \$16,032 | \$16,296 |
| Revenue Required | - | \$25,255 | \$26,480 | \$27,466 | \$28,487 | \$29,543 | \$30,637 |
| Surplus/(Shortfall) | - | (\$10,279) | (\$11,240) | (\$11,962) | (\$12,719) | (\$13,511) | (\$14,341) |

Table A-18
Strawberry Lakeview Special Service District - Sewer Rate Study
Calculated Rates

| Monthly Base Rate | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Connected | \$17.09 | \$17.69 | \$18.15 | \$18.62 | \$19.11 | \$19.62 |
| Standby | \$17.09 | \$17.69 | \$18.15 | \$18.62 | \$19.11 | \$19.62 |
| Volume Rate | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Volume Component | | | | | | |
| Connected | \$1.39 | \$1.41 | \$1.41 | \$1.41 | \$1.41 | \$1.42 |
| Standby | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Capacity Component | | | | | | |
| Connected | \$0.56 | \$0.57 | \$0.57 | \$0.57 | \$0.57 | \$0.58 |
| Standby | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Strength Component | | | | | | |
| Connected | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Standby | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Total Volume Rate | | | | | | |
| Connected | \$1.96 | \$1.99 | \$1.99 | \$1.99 | \$1.99 | \$2.00 |
| Standby | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| Industrial Surcharges | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Volume Surcharge (\$/kgal) | \$1.39 | \$1.41 | \$1.41 | \$1.41 | \$1.41 | \$1.42 |
| Capacity Surcharge (\$/gpd) | \$0.0069 | \$0.0070 | \$0.0070 | \$0.0070 | \$0.0070 | \$0.0070 |
| BOD Surcharge (\$/lb) | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 |
| TSS Surcharge(\$/lb) | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 |

Table A-19
Strawberry Lakeview Special Service District - Sewer Rate Study
Recommended Rates

| Monthly Base Rate | Current Sewer Rate | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---------------------------------|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Connected | \$16.00 | \$26.76 | \$27.51 | \$27.96 | \$28.44 | \$28.95 | \$29.48 |
| Standby | \$10.00 | \$17.09 | \$17.69 | \$18.15 | \$18.62 | \$19.11 | \$19.62 |
| Rate Increase Percentage | | | | | | | |
| Connected | - | 67.2% | 2.8% | 1.6% | 1.7% | 1.8% | 1.8% |
| Standby | - | 70.9% | 3.5% | 2.6% | 2.6% | 2.6% | 2.6% |